Hemorrhage Control & Shock

3D Marines

Hemorrhage Control

Bleeding (hemorrhage) is the escape of blood from capillaries, veins, and arteries.

Capillaries are very small blood vessels that carry blood to all parts of the body.

Veins are blood vessels that carry blood to the heart.

Arteries are large blood vessels that carry blood away from the heart.

Hemorrhage Control

Bleeding can occur inside the body (internal), outside the body (external) or both. There are three types of Bleeding:

Capillary bleeding is slow, the blood "oozes" from the (wound) cut.

Venous bleeding is dark red or maroon, the blood flows in a steady stream.

Arterial bleeding is bright red, the blood "spurts" from the wound. **Arterial bleeding is life threatening and difficult to control.**

Hemorrhage Control

The adult body contains approximately 5 to 6 quarts of blood (10 to 12 pints). The body can normally lose 1 pint of blood without harmful effects. A loss of 2 pints may cause shock, a loss of 5 to 6 pints usually results in death. During certain situations it will be difficult to decide whether the bleeding is arterial or venous. The distinction is not important. The most important thing to remember is that all bleeding must be controlled as soon as possible.

External Bleeding

While administering first aid to a casualty who is bleeding, you must remain calm. The sight of blood is an emotional event for many, and it often appears severe. However, most bleeding is less severe than it appears. Most of the major arteries are deep and well protected by tissue and bone. Although bleeding can be fatal, you will usually have enough time to think and act calmly.

Control Bleeding

There are four methods to control bleeding:

1. Direct pressure
2. Elevation
3. Indirect pressure
4. Tourniquet.

Direct Pressure

First and most effective method to control bleeding. Place a sterile dressing or clean cloth on the wound, tie a knot or adhere tape directly over the wound, only tight enough to control bleeding. If bleeding is not controlled, apply another dressing over the first or apply direct pressure with your hand or fingers over the wound. Direct pressure can be applied by the casualty or a bystander. ***NEVER REMOVE A DRESSING ONCE IT HAS BEEN APPLIED!!!***

Elevation

Raising (elevation) of an injured arm or leg (extremity) above the level of the heart will help control bleeding. Elevation should be used together with direct pressure. Do not elevate an extremity if you suspect a broken bone (fracture) until it has been properly splinted and you are certain that elevation will not cause further injury. Use a stable object to maintain elevation. Placing an extremity on an unstable object may cause further injury.

Indirect Pressure

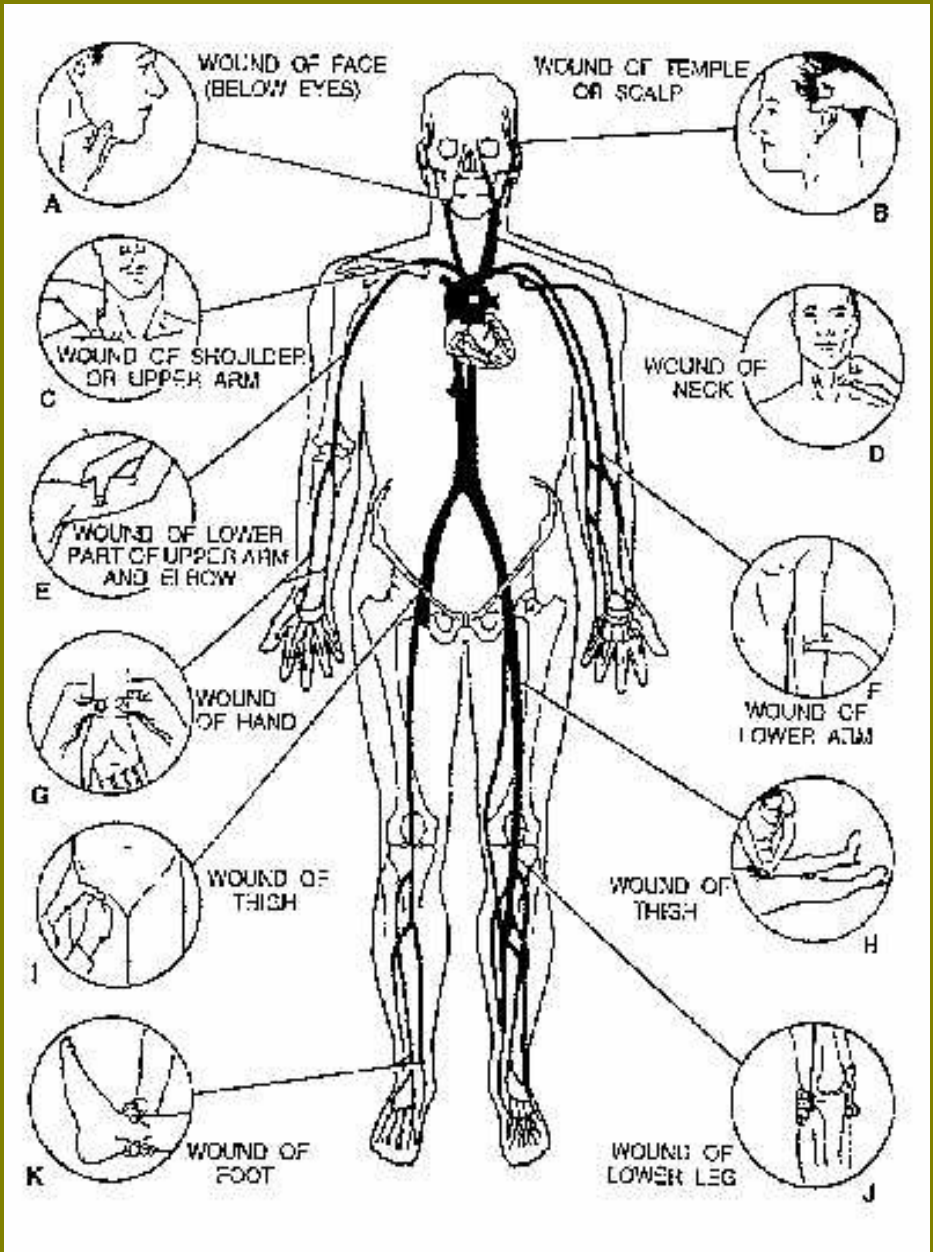
In cases of severe bleeding when direct pressure and elevation are not controlling the bleeding,indirect pressure must be used. Bleeding from an artery can be controlled by applying pressure to the appropriate pressure point. Pressure points are areas of the body where the blood flow can be controlled by pressing the artery against an underlying bone. Pressure is applied with the fingers, thumb, or heel of the hand.

Indirect Pressure(cont.)

Pressure points should be used with caution . Indirect pressure can cause damage to the extremity due to inadequate blood flow.

NEVER apply pressure to the neck (carotid) pressure points, it can cause cardiac arrest.

Indirect Pressure Points



Tourniquet

- A tourniquet should be **used only as a last resort** to control severe bleeding after all other methods have failed and is **used only on the extremities**. Tourniquets cause tissue damage and loss of extremities when used by untrained individuals. Tourniquets are rarely required and should only be used when an arm or leg has been partially or completely severed and when bleeding is uncontrollable.

Tourniquet (cont.)

- The standard tourniquet is normally a piece of cloth folded until it is 3 or more inches wide and 6 or 7 layers thick. A tourniquet can be a strap, belt, neckerchief, towel, or other similar item. A folded triangular bandage makes a great tourniquet. **Never use wire, cord, or any material that will cut the skin.**

Tourniquet (cont.)

1. While maintaining the proper pressure point, place the tourniquet between the heart and the wound, leaving at least 2 inches of uninjured skin between the tourniquet and wound.
2. Place a pad (roll) over the artery.
3. Wrap the tourniquet around the extremity twice, and tie a half-knot on the upper surface.
4. Place a short stick or similar object on the half-knot, and tie a square knot.
5. Twist the stick to tighten, until bleeding is controlled.
6. Secure the stick in place.
7. **Never cover a tourniquet**.

Tourniquet (cont.)

8. Using lipstick or marker, make a 'T" on the casualty's forehead and the time tourniquet was applied.
9. **Never loosen or remove a tourniquet** once it has been applied. The loosening of a tourniquet may dislodge clots and result in enough blood loss to cause shock and death.

Do not touch open wounds with your fingers unless absolutely necessary. Place a barrier between you and the casualty's blood or body fluids.

Internal bleeding

- Internal bleeding, although not usually visible, can result in serious blood loss. A casualty with internal bleeding can develop shock before you realize the extent of their injuries.
- The most common sign of internal bleeding is a simple bruise (contusion), it indicates bleeding into the skin (soft tissues). Severe internal bleeding occurs in injuries caused by a violent force (automobile accident), puncture wounds (knife), and broken bones.

Signs of Internal Bleeding

1. Anxiety and restlessness.
2. Excessive thirst (polydipsia).
3. Nausea and vomiting.
4. Cool, moist, and pale skin (cold and clammy).
5. Rapid breathing (tachypnea).
6. Rapid, weak pulse (tachycardia).
7. Bruising or discoloration at site of injury (contusion).

Treatment for Internal Bleeding

1. Bruise - Apply ice or cold pack, with cloth to prevent damage to the skin, to reduce pain and swelling.
2. Severe internal bleeding:
   a. Call local emergency number or medical personnel.
   b. Monitor airway, breathing, and circulation (ABCs).
   c. Treat for shock.
   d. Place casualty in most comfortable position.
   e. Maintain normal body temperature.
   f. Reassure casualty

Shock - Definition

A state of inadequate tissue perfusion, which causes cellular metabolic oxygen demand to exceed the supply.

Causes

- Life threatening injures
- C-spine injuries
- Amputation
- Disease

Signs & Symptoms of Shock

- Weakness
- Altered level of consciousness
  - Restlessness
  - Anxiety
  - Hostility
  - Lethargy
  - Unconsciousness

Signs & Symptoms of Shock

- Sense of impending doom
- Tachycardia
- Pallor/cyanosis
- Tachypnea
- Diaphoresis

Treatment of Shock (General)

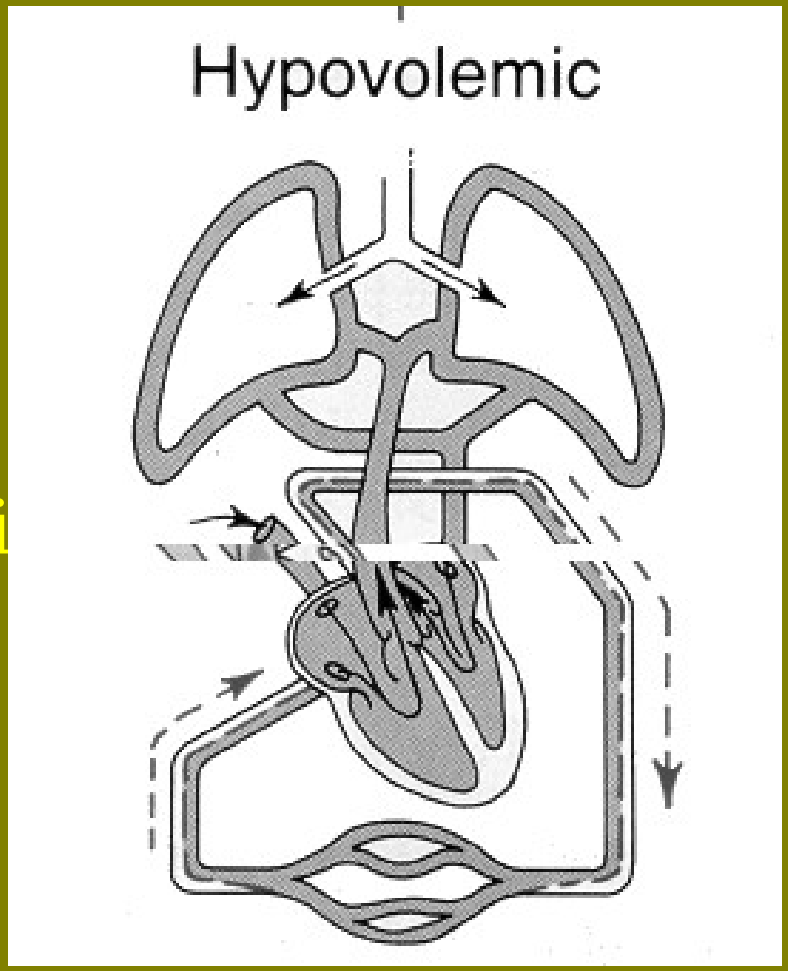
- Keep patient warm
- Trendelenberg position
- Oxygen
- Find the causative factor

Classifications of Shock

- Hypovolemic shock
- Cardiogenic shock
- Obstructive shock
- Distributive shock

Hypovolemic Shock

- Inadequate perfusion
- Causes:
  - External blood loss
  - Loss of plasma
  - Loss of extracellular flui
  - Internal hemorrhage
  - Third space loss

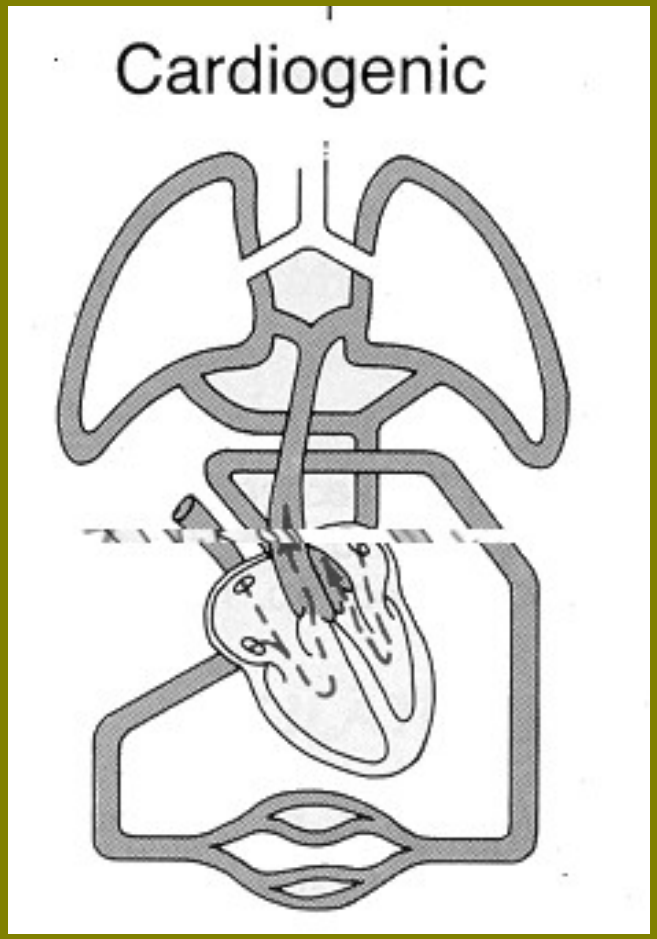


Hypovolemic Shock Treatment

- Identify source
- Control bleeding
- Anti-emetics
- Antidiarrhea
- Restore volume
- Trendelenburg position
- Keep patient warm

Cardiogenic Shock

- Pump failure
- Causes
  - MI
  - Dysrhythmias
  - Mechanical defects
  - Cardiac disease (CHF)
  - Injuries to the heart



Cardiogenic Shock

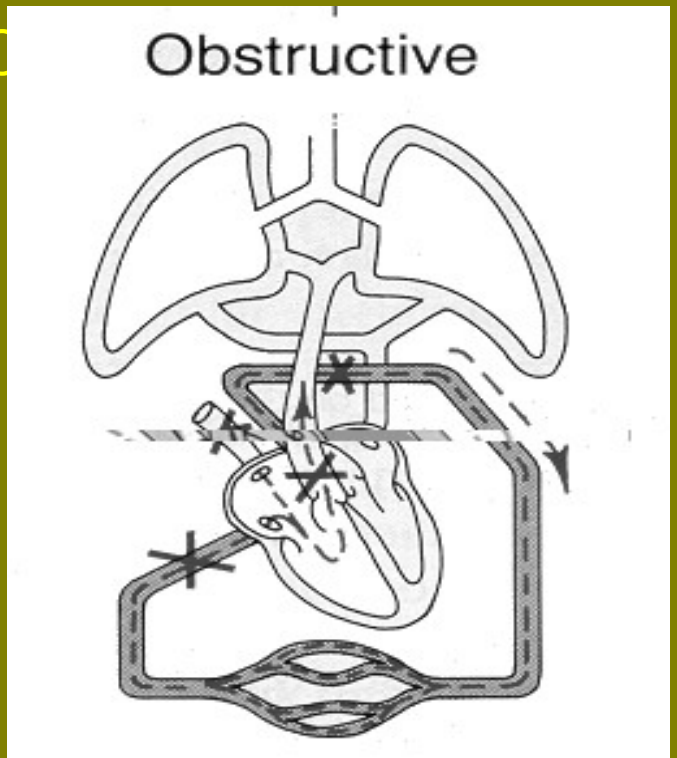
- Signs & Symptoms
  - Chest pain
  - Shortness of breath
  - Cyanosis
  - Peripheral edema
  - Diaphoresis
  - Weakness
  - Loss of consciousness

Cardiogenic Shock

- Treatment
  - Keep warm
  - Supplemental Oxygen
  - Maintain ABC’s
  - Evacuate immediately

Obstructive Shock

- A type of shock resulting from mechanical obstruction of the flow of blood through the central circulatio



Obstructive Shock

- Causes
  - Dissecting Aortic Aneurysm
  - Cardiac tamponade
  - Tension pheumothorax
  - Evisceration of ABD into thoracic cavity
  - Pulmonary embolism (most frequent)

Obstructive Shock

- Signs & Symptoms
  - Chest Pain
  - Shortness of breath, difficulty breathing
  - Tachycardia
  - Cyanosis
  - Decreased/absent lung sounds
  - Altered level of consciousness

Obstructive Shock

- Treatment
  - Maintain ABC's
  - Keep Warm
  - Supplemental Oxygen
  - Needle thoracentesis/chest tube
  - Immediate evacuation

Distributive Shock

- Types:
  - Anaphylaxis
  - Sepsis
  - Spinal Cord Injury
  - CN- poisoning

Anaphylaxis

- Anaphylaxis is one type of Distributive Shock

- Causes
  - Severe reaction to insect bites/stings
  - Allergic reaction to food
  - Systemic (medications)
  - Severe reaction to plants
  - Systemic (animal sera)

Anaphylaxis

- Signs & Symptoms
  - Abdominal cramps
  - Apprehension
  - Burning, warm sensation to skin
  - Itching
  - Angioedema (swelling of lips/mouth)
  - Bronchospasm (difficulty breathing, wheezing)

Anaphylaxis
Signs & Symptoms (cont.)

- Hypotension
- Tachycardia
- Respiratory
  - Coughing
  - Sneezing
  - Rhinorrhea
  - Shortness of breath
  - Chest tightness
  - Choking

Septic Shock

- Sepsis is another type of Distributive Shock

- Causes
  - Gram negative bacteria
  - Gram positive bacilli

Sepsis

- Signs & Symptoms
  - Fever
  - Warm, flushed skin
  - Mild hyperventilation
  - Tachycardia
  - Altered level of consciousness

Sepsis

- Treatment
  - Culture of infection
  - Antibiotics
  - Fluid replacement therapy
  - Fluid Replacement

Treatment of Sepsis must occur within a hospital!

Review

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